UNITED STATES PATENT AND TRADEMARK OFFICE

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09/642,064	08/18/2000	Scott Schoenthal	103.1048.01	6745

			EXAMINER
22883	7590	07/12/2004	LOHN, JOSHUA A

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DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _24 May 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _33-38,40-43,45,49,69,70 and 74-88_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _33-38,40-43,45,49,69,70 and 74-88_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _18 August 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 5/24/2004 have been fully considered but they are not persuasive. The rejections of pending claims 33-38, 40-43, 45, 49, 69, 74, 75, and 78 are sustained as stated below.

With response to applicant's arguments that Lowell fails to disclose the method, means, apparatus, and software implementations of "delivering at least one event message to a multiplexing recipient for delivery through the multiplexing recipient to at least one intended recipient", as stated in all independent claims under consideration, the examiner respectfully disagrees.

In the previous office action the examiner stated that it would have been obvious to one skilled in the art of the current invention that all the devices used in the switching network of Lowell would have obviously used a multiplexing system. This is detailed in the 103(a) rejections below. This established multiplexing network also discloses the delivering of an event message including delivery through the multiplexing recipient on the path to the intended recipient. The multiplexing recipient in the device of Lowell would have been the network interfaces and all associated communication devices and protocols that allow for communication across the obviously multiplexed network. These interfaces act as intermediaries at both sides of the client/server transmission to transmit and receive messages from the network, and are inherent in the use of a switching network such as that disclosed by Lowell (Section 6.2). The invention of Lowell uses a message delivery protocol, in conjunction with the Vistagrams system, to establish communication and transmit messages through the network interfaces to the

switched network (Section 5). These messages originate from the client and are delivered to the multiplexing recipient, in the form of the network interface with associated message delivery protocol and Vistagrams, for delivery through the multiplexing recipient to the intended recipient. The network interface, delivery protocols, and Vistagrams successfully implement all the aspects of the disclosed multiplexing recipient, the details of which are provided in the rejections that follow.

Claim Objections

Claim 78 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 75 and 78 both claim a persistent record of at least one event message at the multiplexing recipient and having an instance of the event message deliverable from the multiplexing recipient to at least one intended recipient. Despite changes in the wording the meanings of the two claims are identical, thus resulting in a failure of claim 78 to further limit the parent material of claim 75.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 33-38, 40-43, 45, 49, 69, 70, 74-76 and 78-88 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Lowell et al.

As per claim 33, Lowell discloses the delivery of the message (Section 5.1, paragraphs 4-

6). The message delivery includes an intermediary recipient, in the form of the network interface

(which is inherent in a client/server switched network, Section 6.2), message delivery protocol,

and Vistagrams (Section 5). This intermediate device is used in the delivery of the message to

the intended recipient. Lowell also discloses maintaining the event message in a persistent

memory (Section 5, paragraphs 3-5 and 8, and Section 5.1, paragraphs 2, 4, and 6), and reliably

delivering the event message to at least one intended recipient of the event message. Lowell

teaches of receiving the message from a process, storing the message persistently, and then

delivering the message to the intended recipient (Section 5, paragraphs 3-8, and Section 5.1,

paragraphs 2-6). Lowell fails to explicitly teach of a multiplexing recipient being in control of

this receiving, storing, and delivering.

It would have been well known to one skilled in the art at the time the invention was

made that a client and server system can involve multiplex communications across a network. In

such a system all nodes on the network, client or server, would be recipients of multiplex

communications.

It would have been obvious to one skilled in the art at the time the invention was made to implement the system of Lowell using multiplex communications.

This would have been obvious because Lowell discloses a fault tolerant system that is useful for distributed networks involving at least a server and a client (Section 5, paragraphs 1 and 2). This system could obviously utilize multiplex communications between the network entities as is well known in the art as a means for communicating across a network. In such a multiplexing system the interface used to access and transmit messages across the network would have acted as a multiplexing recipient.

As per claim 34, Lowell discloses receiving the event message by the intended recipient (Section 5.1, paragraph 3), and generating a confirmation of the event message in response to the event message (Section 5.1, paragraph 4).

As per claim 35, Lowell discloses the message being provided by an event message producer, in this case the client (Section 5.1, paragraph 2).

As per claim 36, Lowell discloses persistently maintaining in a persistent memory of an obviously multiplexing system at least one event message until at least one intended recipient of the event message confirms delivery of the event message (Section 5, paragraphs 3-5 and 8, and Section 5.1, paragraphs 2, 4, and 6). Lowell discloses upon recovery from an error, replaying the event message to the intended recipient (Section 5, paragraph 8). Lowell also discloses the event message being reliably delivered to the intended message (Section 5, paragraph 9).

As per claim 37, Lowell discloses the persistent maintenance includes recording of the event messages in an event-indication queue, or message buffer (Section 5.1, paragraphs 2-6).

Lowell also discloses having the resources for the message queue pre-allocated before the occurrence of the event associated with the event message. This is shown in the boot process where a persistent memory is created that is then used for the later logging of messages (Section 2.2, paragraphs 2-3).

As per claim 38, Lowell discloses a system in which the event-indication queue used for storing messages is reliable even when the event message indicates that allocation of new resources is unstable. This is shown in the messages being stored in a persistent buffer space that stores all messages and operates independently of the rest of the system to maintain messages even in the event of system crashes, or similar events that cause the system resources to be unstable (Section 5, paragraphs 3-5).

As per claim 40, Lowell discloses the delivery of the message including receiving a confirmation of the delivery and removing the event message for the persistent memory in response to the confirmation (Section 5.1, paragraphs 4-6).

As per claim 41, Lowell discloses Persistently maintaining the event message at the obviously multiplexing recipient until at least one intended recipient of the message confirms delivery of the message (Section 5.1, paragraph 6). Lowell also discloses the sender transmitting a confirmation in response to the confirmation of the delivery from the recipient, this is because every message of the client and server contains confirmation of previous transaction in addition to any new transaction (Section 5.1, paragraphs 1-7).

As per claim 42, Lowell discloses the persistent maintenance includes recording of the event messages in an event-indication queue, or message buffer (Section 5.1, paragraphs 2-6). Lowell also discloses having the resources for the message queue pre-allocated before the

occurrence of the event associated with the event message. This is shown in the boot process

where a persistent memory is created that is then used for the later logging of messages (Section

2.2, paragraphs 2-3).

As per claim 43, Lowell discloses a system in which the event-indication queue used for

storing messages is reliable even when the event message indicates that allocation of new

resources is unstable. This is shown in the messages being stored in a persistent buffer space that

stores all messages and operates independently of the rest of the system to maintain messages

even in the event of system crashes, or similar events that cause the system resources to be

unstable (Section 5, paragraphs 3-5).

As per claim 45, Lowell discloses the delivery of the message including receiving a

confirmation of the delivery and removing the event message for the persistent memory in

response to the confirmation (Section 5.1, paragraphs 4-6).

As per claim 49, Lowell discloses performing his methods with a software program

(Section 1, first paragraph). This software program performs all the same limitations as those

described in the rejection of claim 33 shown above. Claim 49 is thus rejected under those

grounds in addition to the use of software code.

As per claim 69, Lowell discloses an apparatus for the delivery of the message (Section

5.1, paragraphs 4-6). The message delivery includes an intermediary recipient, in the form of the

network interface (which is inherent in a client/server switched network, Section 6.2), message

delivery protocol, and Vistagrams (Section 5). This intermediate device is used in the delivery

of the message to the intended recipient. Lowell also discloses maintaining the event message in a persistent memory (Section 5, paragraphs 3-5 and 8, and Section 5.1, paragraphs 2, 4, and 6), and reliably delivering the event message to at least one intended recipient of the event message. Lowell teaches of receiving the message from a process, storing the message persistently, and then delivering the message to the intended recipient (Section 5, paragraphs 3-8, and Section 5.1, paragraphs 2-6). Lowell fails to explicitly teach of a multiplexing recipient being in control of this receiving, storing, and delivering.

It would have been well known to one skilled in the art at the time the invention was made that a client and server system can involve multiplex communications across a network. In such a system all nodes on the network, client or server, would be recipients of multiplex communications.

It would have been obvious to one skilled in the art at the time the invention was made to implement the system of Lowell using multiplex communications.

This would have been obvious because Lowell discloses a fault tolerant system that is useful for distributed networks involving at least a server and a client (Section 5, paragraphs 1 and 2). This system could obviously utilize multiplex communications between the network entities as is well known in the art as a means for communicating across a network. In such a multiplexing system the interface used to access and transmit messages across the network would have acted as a multiplexing recipient.

As per claim 70, Lowell discloses an apparatus for receiving the event message by the intended recipient (Section 5.1, paragraph 3), and generating a confirmation of the event message in response to the event message (Section 5.1, paragraph 4).

As per claim 74, Lowell discloses the reliable delivery of an event message (Section 5.1, paragraphs 4-6). The message delivery includes an intermediary recipient, in the form of the network interface (which is inherent in a client/server switched network, Section 6.2), message delivery protocol, and Vistagrams (Section 5). This intermediate device is used in the delivery of the message to the intended recipient. Lowell also discloses maintaining the event message in a persistent memory (Section 5, paragraphs 3-5 and 8, and Section 5.1, paragraphs 2, 4, and 6), and having a deliverable instance of an event message for delivery at least one intended recipient of the event message. Lowell teaches of a persistent record of at least one event message and the deliverable instance message of the message for the intended recipient (Section 5, paragraphs 3-8, and Section 5.1, paragraphs 2-6). Lowell fails to explicitly teach of a multiplexing recipient being in control of this receiving, storing, and delivering.

It would have been well known to one skilled in the art at the time the invention was made that a client and server system can involve multiplex communications across a network. In such a system all nodes on the network, client or server, would be recipients of multiplex communications.

It would have been obvious to one skilled in the art at the time the invention was made to implement the system of Lowell using multiplex communications.

This would have been obvious because Lowell discloses a fault tolerant system that is useful for distributed networks involving at least a server and a client (Section 5, paragraphs 1 and 2). This system could obviously utilize multiplex communications between the network entities as is well known in the art as a means for communicating across a network. In such a

multiplexing system the interface used to access and transmit messages across the network

would have acted as a multiplexing recipient.

As per claim 75, Lowell discloses a persistent memory for reliably delivering event

messages. The message delivery includes an intermediary recipient, in the form of the network

interface (which is inherent in a client/server switched network, Section 6.2), message delivery

protocol, and Vistagrams (Section 5). This intermediate device is used in the delivery of the

message to the intended recipient. The persistent memory includes a persistent record of at least

one event message until at least one intended recipient of the event message confirms delivery of

the event message (Section 5, paragraphs 3-9, and Section 5.1, paragraph 6). Lowell also

discloses upon recovery from an error having a replayable instance of the message (Section 5,

paragraphs 8-9). Lowell fails to explicitly teach of a multiplexing recipient being in control of

this receiving, storing, and delivering.

It would have been well known to one skilled in the art at the time the invention was

made that a client and server system can involve multiplex communications across a network. In

such a system all nodes on the network, client or server, would be recipients of multiplex

communications.

It would have been obvious to one skilled in the art at the time the invention was made to

implement the system of Lowell using multiplex communications.

This would have been obvious because Lowell discloses a fault tolerant system that is

useful for distributed networks involving at least a server and a client (Section 5, paragraphs 1

and 2). This system could obviously utilize multiplex communications between the network

entities as is well known in the art as a means for communicating across a network. In such a

multiplexing system the interface used to access and transmit messages across the network

would have acted as a multiplexing recipient.

As per claim 76, Lowell discloses recording event messages during a duration when

delivery of the event message is not yet feasible, such as in the event that the destination is not

operational (Section 5, paragraphs 7-9).

As per claim 78, Lowell discloses maintaining a persistent record of at least one event

message in a persistent memory (Section 5, paragraphs 3-5 and 8, and Section 5.1, paragraphs 2,

4, and 6), and having a deliverable instance of an event message for delivery at least one

intended recipient of the event message.

As per claim 79, Lowell discloses performing his methods with a software program

(Section 1, first paragraph). This software program performs all the same limitations as those

described in the rejection of claim 34 shown above. Claim 79 is thus rejected under those

grounds in addition to the use of software code.

As per claim 80, Lowell discloses performing his methods with a software program

(Section 1, first paragraph). This software program performs all the same limitations as those

described in the rejection of claim 35 shown above. Claim 80 is thus rejected under those

grounds in addition to the use of software code.

As per claim 81, Lowell discloses performing his methods with a software program

(Section 1, first paragraph). This software program performs all the same limitations as those

described in the rejection of claim 36 shown above. Claim 81 is thus rejected under those grounds in addition to the use of software code.

As per claim 82, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 37 shown above. Claim 82 is thus rejected under those grounds in addition to the use of software code.

As per claim 83, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 38 shown above. Claim 83 is thus rejected under those grounds in addition to the use of software code.

As per claim 84, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 40 shown above. Claim 84 is thus rejected under those grounds in addition to the use of software code.

As per claim 85, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 41 shown above. Claim 85 is thus rejected under those grounds in addition to the use of software code.

As per claim 86, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 42 shown above. Claim 86 is thus rejected under those grounds in addition to the use of software code.

As per claim 87, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 43 shown above. Claim 87 is thus rejected under those grounds in addition to the use of software code.

As per claim 88, Lowell discloses performing his methods with a software program (Section 1, first paragraph). This software program performs all the same limitations as those described in the rejection of claim 45 shown above. Claim 88 is thus rejected under those grounds in addition to the use of software code.

Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lowell et al. in further view of Borg et al., "Fault Tolerance Under UNIX", ACM Transactions on Computer Systems, vol. 7, no. 1, published February 1989.

As per claim 77, Lowell discloses at least one event message in a persistent memory (Section 5, paragraphs 3-5). The message delivery includes an intermediary recipient, in the form of the network interface (which is inherent in a client/server switched network, Section 6.2), message delivery protocol, and Vistagrams (Section 5). This intermediate device is used in the delivery of the message to the intended recipient. The persistent memory includes a persistent record of at least one event message until at least one intended recipient of the event message confirms delivery of the event message (Section 5, paragraphs 3-9, and Section 5.1, paragraph 6). Lowell also discloses replaying an event message when recovering from an error (Section 5, paragraphs 8 and 9). Lowell fails to explicitly teach of a multiplexing recipient being in control of this receiving, storing, and delivering.

It would have been well known to one skilled in the art at the time the invention was made that a client and server system can involve multiplex communications across a network. In such a system all nodes on the network, client or server, would be recipients of multiplex communications.

It would have been obvious to one skilled in the art at the time the invention was made to implement the system of Lowell using multiplex communications.

This would have been obvious because Lowell discloses a fault tolerant system that is useful for distributed networks involving at least a server and a client (Section 5, paragraphs 1 and 2). This system could obviously utilize multiplex communications between the network

entities as is well known in the art as a means for communicating across a network. In such a

multiplexing system the interface used to access and transmit messages across the network

would have acted as a multiplexing recipient.

Lowell also fails to disclose a system with a first and second server device having access

to a plurality of memory locations with the second server able to replay the messages in the event

of failure of the first.

Borg discloses storing messages in a plurality of persistent memory locations accessible

to both the first and second server devices (Section 2.1 on page 4). Borg further discloses error

recovery from the first server device including replaying the event message by the second device

(Section 5.3 on page 17).

It would have been obvious to one skilled in the art at the time the invention was made to

implement the two server system of Borg in the fault tolerant system of Lowell.

This would have been obvious because Lowell shows a desire to create a system that is

capable of being restored after a crash (Section 1, first paragraph). Lowell also admits that the

system developed to aid in restoration is only useful if the failures are temporary problems

(Section 2.3, paragraph 5). It would have been obvious to one skilled in the art at the time the

invention was made that the invention of Lowell in incomplete and an ability to recover from a

permanent failure, such as an irreparable system crash, would be desirable. Borg teaches a

system that can be used to recover from a complete system crash (Section 1.2 on page 3). This

system utilizes redundantly operating machines that could easily utilize the fault tolerant system

disclosed by Lowell. The recoverability of Lowell is obviously enhanced by having a redundant

server in operation should a permanent failure occur in the first server, as is shown by Borg.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Joshua A Lohn whose telephone number is (703) 305-3188. The

examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Robert Beausoleil can be reached on (703) 305-9713. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAL

SCOTT BADERMAN
PRIMARY EXAMINER